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05-04-2019, 09:47 PM #1

Zeebins
Advanced Member

Join Date: Jun 2017
Location: Massachusetts
Posts: 865

Zeebins's Photos

1997 SL2

Rear seat cigarette lighter/USB ports

A few weeks ago while I was vacuuming my car I saw the ash tray on the back of the center console and thought 2 things. This first one was, "oh I forgot that was there", and the second was, "I wonder if I could turn this into something", so, I did. A lot of newer cars have power outlets and usb ports everywhere and the location of the ash tray seemed like it would be the perfect spot to have them. Now, I'm not sure how often others have back seat passengers that want to charge their phone, so it may not be the most useful location for the driver but you could always just get a longer cord if you want to charge your phone from the front. Having it centrally located in the car though helps with my other main purpose for it though, to power my car vac and my portable air compressor for whenever I want to use those but don't want to risk burning up the F-5 terminal. Overall I think it turned out pretty good for my first project like this. I made a write up of how I did everything below but if you just want to see the final results, here it is.

List of things used for this project:

Cigarette lighter/ USB ports, I used this one
Fuse block/inline fuse holder
A relay
12 gauge wire (red, black, your choice of color)
16 gauge wire (your choice of color)
12 gauge ring terminals (I used stud size 5/16 and #8)
12/16 gauge female quick disconnect terminals
T tap terminals (or whatever they're called)

Before I started working on the wiring, I needed to modify the ash tray to hold the outlet and usb ports. To remove the

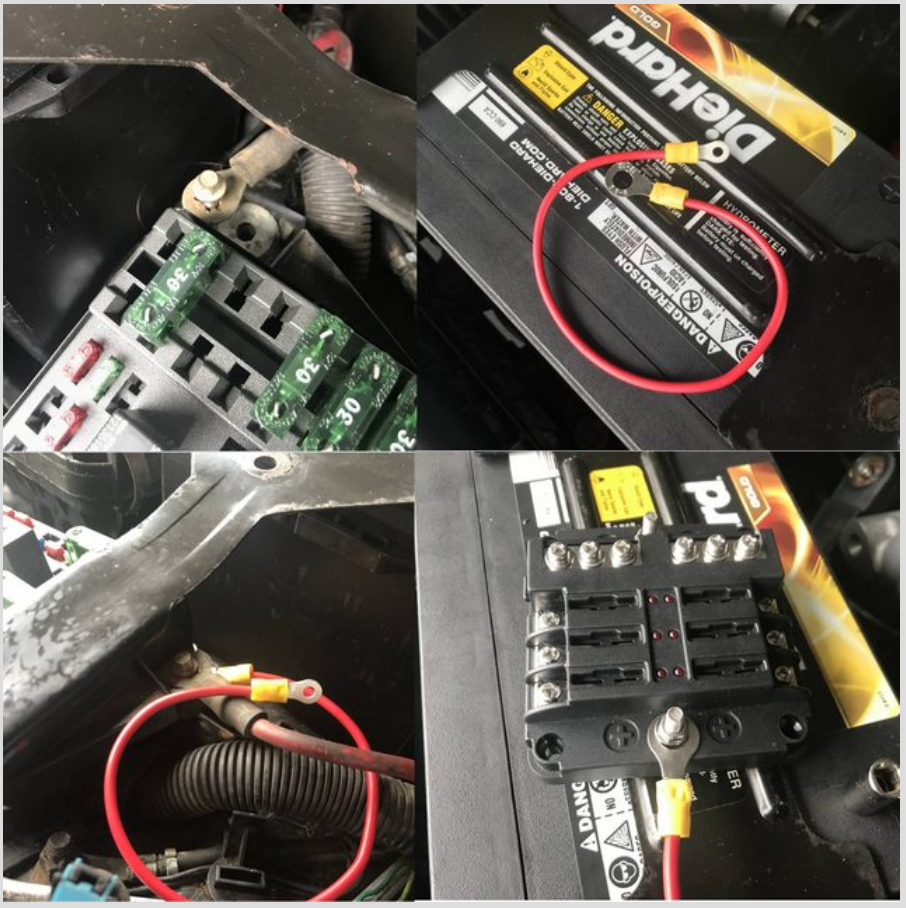
ash tray from the center console, spin the tray open and push down in the metal tab to pull the tray part out. Then grab one of the sides of the slot it goes into and pull it toward you.

You need to cut pretty much the entire back off in order for everything to fit. I used a Dremel and cutting discs to do this. Be carful not to cut past the plastic tabs though or you wont be able to put it back into the console.

I used the original faceplate that came with the outlet/usb ports and carefully cut/grinned away at the faceplate until it fit. I had to take pretty much everything off except a little bit around the holes for it to work. It felt pretty flimsy after all this so if you want to do the same, be carful while handling it to not break it. And yes, I put it in backwards so I would have a flush(ish) front.

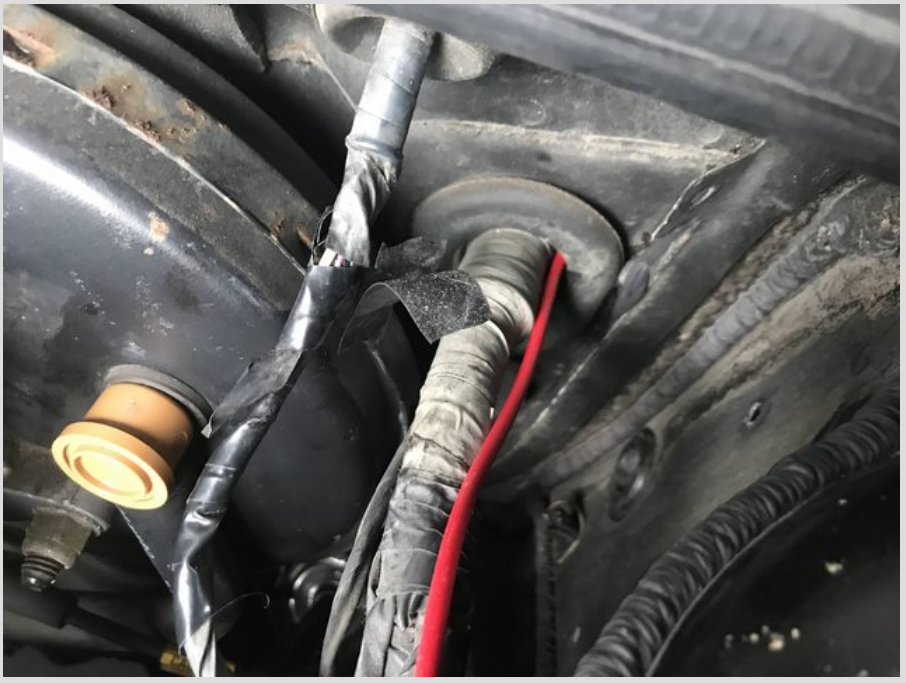
I used some JB weld on the front and a questionable, yet functional, amount of hot glue to hold the ports in place in the back. I tried sanding the front of it to smooth out the JB weld but then it wasn't black anymore so I tried painting it, but I didn't really like how the paint came out so I sanded it again and what you see here is what I ended up with. I don't love how came out, and I could probably do better smoothing the JB weld while putting it on, but its fine for now.

Next up is getting all the wiring set up in the car. As always, disconnect the battery before working on the electrical system. The power going to the new fuse block will tap off of the positive connector to the fuse box under the hood. It comes off with a 7mm bolt. Cut off a bit of red wire and crimp on 2 ring terminals. One side will go to the positive fuse box connector, and one will go to the fuse block. A size 8 ring terminal ended up being a little too small to fit onto the fuse block so I had to switch to a 5/16 one. Its a little too big for the job but it still holds on fine.



I needed a spot to mount the fuse block that wouldn't get in the way of anything but I also needed to be able to get to the fuse if it ever needs to be replaced. My car has an aftermarket alarm in it and the speaker for the alarm was a perfect place mount it. I held the fuse box onto the strut tower with one of the screws holding on the loud speaker. Now, the speaker hasn't been removed in 19 years, so there wasn't much left of the screw holding it on. That's the power of rust right there! It was replaced with a new one.

Running the wire into the car is probably the hardest part, but even that wasn't very hard. Cut off enough wire to run from the fuse block to just under the radio and connect it to the fuse block with another ring terminal. I just took a small pick and poked out a hole in the main grommet going thorough the fire wall and ran the wire through. Be carful to not poke into the main loom or you may damage a wire that you don't want to have to fix.

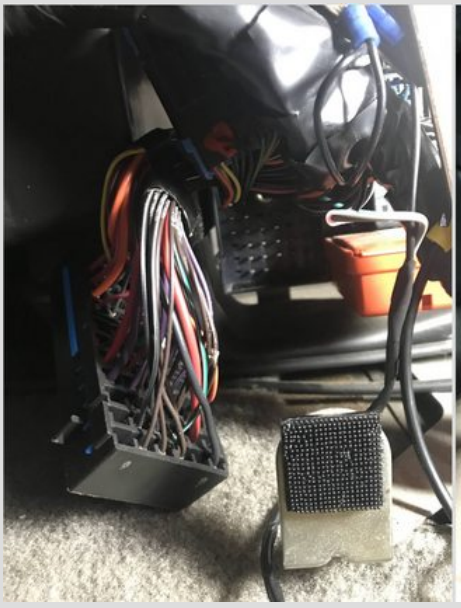


Inside the car I removed the dash pad and this cover underneath the steering column. The dash pad I removed just to get some better light. The panel under the steering column probably doesn't need to be removed, but it does give more space to work with. It's held on by 5, 7mm screws, and 2 longer 7mm screws holding the OBD port on. The hood release is held on be 3, 10mm speed nuts. I also removed the center console at this time.

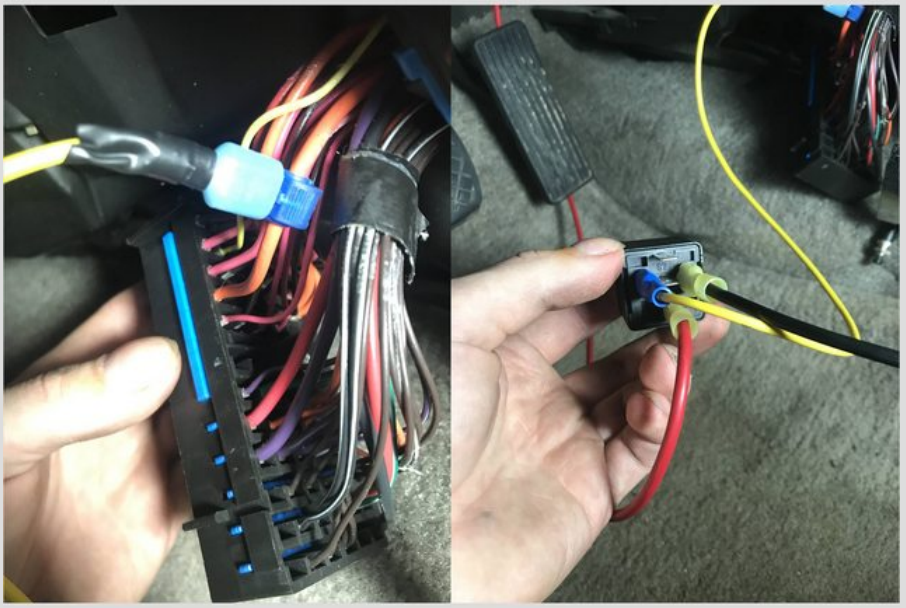
Feed the wire though the hole you made and you'll be able to see it from underneath the steering column. Route the wire toward the radio, making sure it doesn't get caught on any of the pedals.

Now comes the fun part, setting up the relay so that our new accessories only comes on with the key. The wire you just ran into the car will connect to pin 30 on the relay. Then cut some black wire to connect to pin 85 for the ground. There's an existing ground next to the red chime module box that works perfect for this.

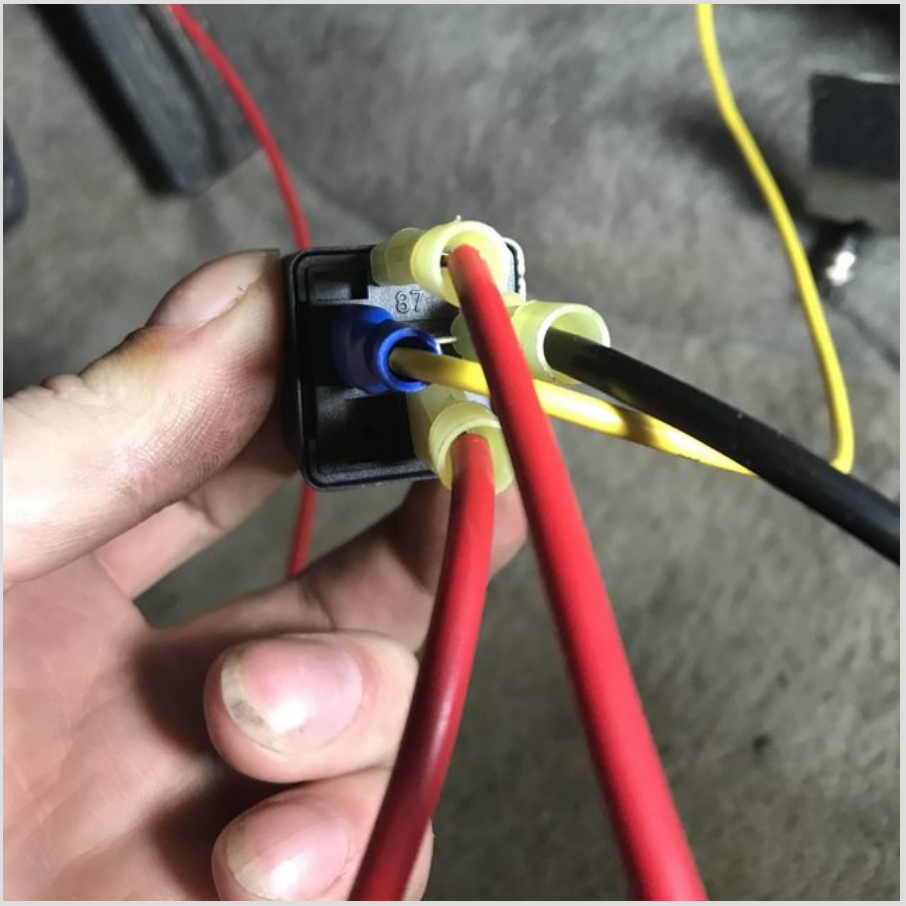
Pin 86 will be what taps into one of the ignition wires. If you're using an OE radio, tap the orange F-9 wire on the back of the interior fuse box. If you're using an aftermarket radio, you can tap either the orange F-9 wire or the brown F-12 wire. Both of these wires only become live with the key in the "Run" position" I removed the back of the fuse box to make it easier to access the wires. It's held in place with a single 7mm nut.



Taping into the wire is easy with a T tap connector. Just clamp part the goes over the wire onto either the orange or brown wire and crimp the other part onto the wire that will lead to pin 86 on the relay. I used 16 gauge yellow for this but you can use any color you want.



After taping the ignition the only part left is getting a wire to the ports. I used another red wire for this since that's all I had but you can get a 4th color of 12 gauge wire if you want them to all be different.



Tuck the relay somewhere out of the way where if wont get kicked or caught on anything. I zip tied mine to the loom going to the fuze box. Once the panel goes back in place you cant even see it.

Continued in next post

...
97 SL2, auto, 117K miles
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Rate the quality of this post and help *Zeebins* reputation points. Click the reputation button near the bottom left corner of this message box. Thank you!

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05-04-2019, 09:48 PM #2

Zeebins
Advanced Member

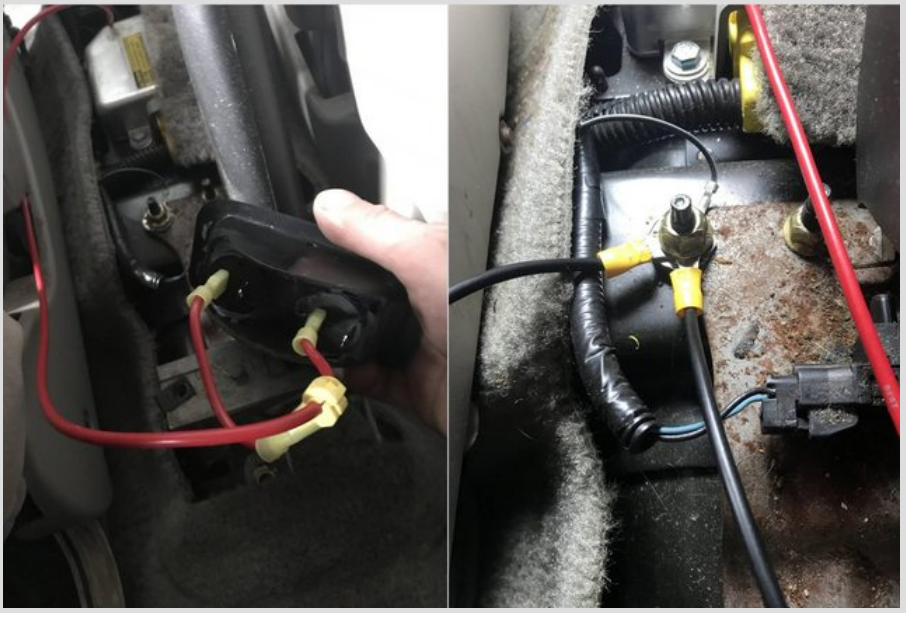
Join Date: Jun 2017
Location: Massachusetts
Posts: 865

Zeebins's Photos

1997 SL2

Re: Rear seat cigarette lighter/USB ports

I only wanted to run 1 wire but since I had to power 2 ports I just used another T tap connector to split the wire. There's another good ground bolt next to the parking brake, I used this for both of the ports.



Once you get all that done, that's pretty much it. Just connect the battery back up to make sure everything works and amazingly, mine did!

If everything works as intended you can go ahead and put the console, dash, and steering column panel back together. Make sure that before you screw the console back into place that the wires are being run through the hole on the back. Now you can just pop the ports into place and everything will finally be done.

Sorry for the kind of lengthy write up. It was a lot of work since I have't really done anything like this before but I still had a lot of fun doing it.

Huge thanks to Oldnuc for the ignition wiring schematic.
adventureoflink and trottida have also done similar projects and their threads where a huge help as well.
http://www.saturnfans.com/forums/sho...d.php?t=195587

http://www.saturnfans.com/forums/sho...d.php?t=174747

https://imgur.com/a/LhjDd0M

Thanks for reading if you made it this far

...
97 SL2, auto, 117K miles
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Rate the quality of this post and help *Zeebins* reputation points. Click the reputation button near the bottom left corner of this message box. Thank you!

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05-05-2019, 06:40 AM #3

trottida
Master Member

Join Date: Oct 2005
Location: North of North of Toronto, Northern Ontario, Canada
Posts: 2,716

trottida's Photos

1999 SL2
2001 SL1

Re: Rear seat cigarette lighter/USB ports

Hey, that's pretty slick! I'm thinking I would use the removable ashtray with holes cut for the 12V ports for a cleaner look. The back portion would need to be cut out and I'd need to lock it in place somehow. I have a spare console in my parts car; I'm going to give it a go and see what I can come up with.

...
1999 SL2 MT (287,130 km @ 10/2019)
2012 Ford Focus SEL HB MT
2011 Suburban LT

Past Saturns
2001 SL1 MT (438,500 km 11y)
1993 SW2 AT (10y)
2001 LW200 MT (3.5y)
1992 SL2 MT (5y)

:canada:

REWARD EXCELLENCE!

Rate the quality of this post and help *trottida* reputation points. Click the reputation button near the bottom left corner of this message box. Thank you!

quote

05-05-2019, 10:13 AM #4

alordofchaos
Super Member

Join Date: Jan 2009
Location: Central MI
Posts: 12,837

alordofchaos's Photos

2002 SC2
1998 SL2

Re: Rear seat cigarette lighter/USB ports

wow, great job and nice write-up!

I may do something like this eventually. I never have backseat passengers so this would be low on the list, but it would be more useful than the ashtray (no smoking in my car)

...
I'm not worthy to grovel in the shadow of Signmaster's wisdom

11/2016 red 2002 5 spd SC2 151k DD
7/2010 Craigslist white 1997 SC2 project
12/2008 eBay silver 1998 SL2 5 spd 102k, now 201k+ miles

REWARD EXCELLENCE!

Rate the quality of this post and help *alordofchaos* reputation points. Click the reputation button near the bottom left corner of this message box. Thank you!

quote

05-05-2019, 01:12 PM #5

trottida
Master Member

Join Date: Oct 2005
Location: North of North of Toronto, Northern Ontario, Canada
Posts: 2,716

trottida's Photos

1999 SL2
2001 SL1

Re: Rear seat cigarette lighter/USB ports

> Quote:
> Originally Posted by **alordofchaos**
> *wow, great job and nice write-up!*
>
> *I may do something like this eventually. I never have backseat passengers so this would be low on the list, but it would be more useful than the ashtray (no smoking in my car)*

My thoughts are for the phone charge port; using the stock location interferes with the cup holders.

...
1999 SL2 MT (287,130 km @ 10/2019)
2012 Ford Focus SEL HB MT
2011 Suburban LT

Past Saturns
2001 SL1 MT (438,500 km 11y)
1993 SW2 AT (10y)

2001 LW200 MT (3.5y)
1992 SL2 MT (5y)

:canada:

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Rate the quality of this post and help *trottida* reputation points. Click the reputation button near the bottom left corner of this message box. Thank you!

quote

05-05-2019, 01:21 PM #6

Zeebins
Advanced Member

Join Date: Jun 2017
Location: Massachusetts
Posts: 865

Zeebins's Photos

1997 SL2

Re: Rear seat cigarette lighter/USB ports

Quote:

> Originally Posted by **trottida**
> *Hey, that's pretty slick! I'm thinking I would use the removable ashtray with holes cut for the 12V ports for a cleaner look. The back portion would need to be cut out and I'd need to lock it in place somehow. I have a spare console in my parts car; I'm going to give it a go and see what I can come up with.*

The plastic for thbag ash tray is a lot thicker than the insert so it'll be a little harder to cut, but definitely doable . I'd love to see how it turns out if you end up making it.

...
97 SL2, auto, 117K miles
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REWARD EXCELLENCE!

Rate the quality of this post and help *Zeebins* reputation points. Click the reputation button near the bottom left corner of this message box. Thank you!

quote

05-05-2019, 01:23 PM #7

Zeebins
Advanced Member

Join Date: Jun 2017
Location: Massachusetts
Posts: 865

Zeebins's Photos

1997 SL2

Re: Rear seat cigarette lighter/USB ports

Quote:

> Originally Posted by **trottida**
> *My thoughts are for the phone charge port; using the stock location interferes with the cup holders.*

Before doing this project, I was using this USB adapter and a right angle cable for charging my phone. It still gets in the way of bigger cups but I can at least fit a bottle now without the charger getting I the way.

...
97 SL2, auto, 117K miles
Powered by Plastic

REWARD EXCELLENCE!

Rate the quality of this post and help *Zeebins* reputation points. Click the reputation button near the bottom left corner of this message box. Thank you!

quote

05-05-2019, 01:56 PM #8

Zeebins
Advanced Member

Join Date: Jun 2017
Location: Massachusetts
Posts: 865

Zeebins's Photos

1997 SL2

Re: Rear seat cigarette lighter/USB ports

The amount of typos I've made in this thread is honestly concerning

...
97 SL2, auto, 117K miles
Powered by Plastic

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Rate the quality of this post and help *Zeebins* reputation points. Click the reputation button near the bottom left corner of this message box. Thank you!

quote

06-10-2019, 07:36 AM #9

trottida
Master Member

Re: Rear seat cigarette lighter/USB ports

Just an update on where I am with this mod. I bought a dual USB port for this purpose (pictured below) and I was surprised how big it was. I had thought that it would fit the same as the OEM lighter port but the hole required is 1 and 3/16" (3 cm). The hole in the console for the lighter is probably around 7/8ths to 1 inch.

Given the size, using the existing tray in the ashtray assembly isn't going to work for me. I contacted a friend who is

Join Date: Oct 2005
Location: North of North of Toronto, Northern Ontario, Canada
Posts: 2,716

trottida's Photos

1999 SL2
2001 SL1

heavily into 3D printing and I'm having him design a replacement plate that will snap in in place of the complete ashtray assembly. I'm having him make it just a flat plate that can be drilled into to install any accessory. If anyone is interested in one I'll likely throw it up on Amazon and he'll make them to order. We'll see what he comes up with; I imagine he'll have a couple designs to choose from.

I wired up the USB port into my existing fused circuit I created for my seat heater install and left it loose next to my parking brake for now. When ready I can pull it into the console for final installation.

At least for now I can use it on a 3400 km trip we're taking at the end of the month. We're dropping off my 14 year old daughter in Moncton for a 3 week cultural experience and taking a quick trip to Prince Edward Island. We're bringing our 11 year old daughter for the drive. I'm speculating the USB port will get lots of use over the 5 day excursion!

As a side note, my electrical system runs pretty consistently at 14.0 Volts

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2012 Ford Focus SEL HB MT
2011 Suburban LT

Past Saturns
2001 SL1 MT (438,500 km 11y)
1993 SW2 AT (10y)
2001 LW200 MT (3.5y)
1992 SL2 MT (5y)

:canada:

REWARD EXCELLENCE!

Rate the quality of this post and help *trottida* reputation points. Click the reputation button near the bottom left corner of this message box. Thank you!

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